***environmental SCIENTIST* journal: learning resource notes**

The purpose of these educational resource notes is to provide a format for informal, seminar-style discussions of the topics explored in the latest edition of the journal of the Institution of Environmental Sciences.

Through discussion of the ideas and issues presented within the journal, they aim to supplement and enhance students’ knowledge and understanding of a broad range of environmental science issues and provide insights into the professional concerns of practising environmental scientists.

**Articles in focus**

The following articles have been selected as particularly relevant for in-depth discussion, allowing for wider debate of the key elements of the article topic. Some specific questions/points you may wish to consider when reading and discussing these articles are outlined.

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| Learning outcomes | * Understand the main ideas discussed in the publication
* Describe the main conclusions and their relevance to the environmental science sector
* Critically reflect on the main concepts discussed
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| Format | * Articles of particular interest are to be selected and shared with the group to read ahead of the discussion. Suggestions of focus articles are attached here
* Small group discussions of articles that closely relate to programme content to supplement learning
* Discussions can be led by participants or the tutor, using the ‘articles in focus’ resource to prompt debate and aid the conversation
* The suggested discussion points and questions provided in this pack for selected articles can be used as a starting point to guide the discussion
* Students can be encouraged to choose to discuss any of the other articles within the issue
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e*nvironmental SCIENTIST* **The world wakes up to waste**Vol 29, Issue 1

[www.the-ies.org/resources/world-wakes-waste](http://www.the-ies.org/resources/world-wakes-waste)

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| **Topic overview**  | From plastic in rivers and oceans to the contribution to climate change, the issue of waste can no longer be confined to landfill. Despite growing awareness of the consequences of our use of resources and our wasteful habits, there are many problems still to be solved. Within this edition, the authors examine how circular economy theory can be embedded across sectors, how we might tackle plastic in oceans and rivers, and provides practical case studies of waste hierarchies in action. |
| **Articles in focus** |
| **Embedding circular design****Sophie Thomas (p.8)** | **Article overview:** This article explores the importance of design in helping to address environmental challenges by building in consideration of these impacts at the concept design stage and implementing a circular design model which aims to reuse and recycle materials.  |
| * Do you think waste should be considered at the concept design stage? Why/why not?
* Why do you think engagement of the design sector with the environmental impacts imbedded through product design is so low? What could be done to improve this?
* How could collaboration and knowledge transfer between those who see the problems at the end of a product’s life (i.e. waste management or material recovery experts) and designers be increased?
* What do you think the biggest challenges are in moving towards a circular design model?
* How do you think public information about what happens to our products post use could be improved?
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| **The role of waste to energy in the circular economy****Blaise Kelly (p.44)** | **Article overview:** This article discusses the merits of waste to energy technologies in dealing with our municipal waste. |
| * Why do you think some European countries have been able to convert waste to energy in cities more effectively than in Britain?
* A lack of infrastructure to distribute the energy generated by UK incinerators results in the loss of most of this energy to the atmosphere. Why do you think investment in increasing the efficiency of waste to energy in the UK has not been prioritised, and how could this be improved?
* What do you think can be done to improve public understanding of the merits of waste to energy, and to ensure investment in minimising emissions?
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| **The role of retail****Dorothy MacKenzie (p.60)** | **Article overview:** This article outlines the opportunities provided by circular systems to re-think how we produce and consume products.  |
| * How do you think customers can be motivated to make the changes in consumption behaviour that are required for circular economy systems, and what role should producers and retailers play in achieving this change?
* What are the benefits to producers of adopting circular economy principles?
* What challenges do you foresee companies will need to overcome in a move towards new, circular business models such as shared vehicle access and clothing or furniture rental?
* In addition to the examples given in the article, are there any other products that you think would lend themselves to a model of ‘use’ over ‘consumption’ within a circular system?
* Collaboration will be a key element in moving towards a circular economy model but has the potential to restrict the scope of competition between producers. How do you think manufacturers can mitigate and manage this potential issue?
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